

Appl. No. 09/998,801
Amdt. dated June 22, 2004
Reply to Office action of Dec. 22, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-14 (canceled)

15. (original) A resistive heater for heating a semiconductor processing chamber, the resistive heater comprising:
- a doped ceramic heating element shaped to form at least one continuous electrical path;
 - an undoped ceramic material encasing at least a portion of the doped ceramic heating element to form a monolithic plate; and
 - wherein the coefficient of thermal expansion of the doped ceramic heating element is substantially the same as the coefficient of thermal expansion of the undoped ceramic material.
16. (original) The resistive heater of claim 15, wherein the doped ceramic heating element and the undoped ceramic material comprise silicon carbide.
17. (original) The resistive heater of claim 16, wherein the dopant of the doped ceramic heating element comprises nitrogen.
18. (original) The resistive heater of claim 17, wherein the dopant level of nitrogen within the doped ceramic heating element is between about 150 and 2000 ppm.
19. (original) The resistive heater of claim 15, wherein the plate comprises a susceptor configured to support a semiconductor substrate during processing.
20. (original) The resistive heater of claim 15, wherein the plate includes at least one substantially oval shaped aperture formed therein for allowing passage of a substrate support pin, the substantially oval shaped aperture having a major axis substantially parallel to a radius of the plate and sized to allow thermal expansion of the plate.

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21. (original) The resistive heater of claim 15, wherein the continuous electrical path comprises a plurality of concentric loops that alternate direction.
22. (original) The resistive heater of claim 15, wherein the doped ceramic heating element is completely encased within the undoped ceramic material.
23. (original) The resistive heater of claim 15, wherein the doped ceramic heating element and the undoped ceramic material comprise at least one of aluminum oxide, boron nitride and silicon nitride.
24. (original) The resistive heater of claim 15, wherein the dopant of the doped ceramic heating element comprises at least one of boron, arsenic, antimony and phosphor.
25. (original) The resistive heater of claim 15, wherein the thickness of the resistive heater ranges from about 0.1 to about 0.3 inches.
26. (original) The resistive heater of claim 15, wherein the doped ceramic heating element has an electrical resistivity ranging from about 2 to about 5 orders of magnitude less than the electrical resistivity of the undoped ceramic material.
27. (original) The resistive heater of claim 15, wherein the doped ceramic heating element forms at least two separate electrical paths to provide at least two separate heating zones.

Claims 28-35 (canceled)